Epitomes

Important Advances in Clinical Medicine

General Surgery

The Scientific Board of the California Medical Association presents the following inventory of items of progress in general surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers, or scholars to stay abreast of these items of progress in general surgery that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on General Surgery of the California Medical Association, and the summaries were prepared under its direction.

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Advances in Liver Transplantation

LIVER TRANSPLANTATION is the only definitive treatment for end-stage liver disease. The procedure is increasingly common in the United States, with more than 1,680 performed in 1988 compared with 18 in 1980. This increase is stimulated by improved operative and long-term survival rates, most centers reporting one-year survival figures of 70% to 80% or better in patients who would otherwise die of diseases such as acute fulminant hepatitis, chronic active hepatitis, primary biliary cirrhosis, sclerosing cholangitis, biliary atresia, and inborn errors of metabolism. Most surviving patients return to their pretransplant activities.

The improved survival rates now reported in large series from many centers relate to several factors. Most important, candidates are referred for liver transplantation earlier in the natural course of their disease, before they reach nutritional bankruptcy, advanced encephalopathy, renal failure, severe coagulopathy, and uncontrolled hemorrhage. Physicians caring for patients with liver disease are learning to avoid a right upper quadrant operation, if possible, in patients who are likely to become liver transplant candidates, especially those with coagulopathies. These factors reduce operative risks. The technical aspects of the recipient operation continue to advance, with several centers reporting decreased operating times, decreased blood usage, and an increased use of autologous blood salvaging devices. Triple-drug immunosuppressive regimens—low-dose corticosteroids, cyclosporine, and azathioprine—are widely accepted now, allowing lower doses of each drug with reduced side effects. The monoclonal antibody OKT3 is used more aggressively to treat steroid-resistant episodes of rejection and in some centers is used for induction immunosuppression immediately postoperatively, especially in patients with renal dysfunction.

The availability of suitable donor organs continues to be a major limiting problem. The state of Oregon adopted a routine inquiry law in 1985, and 43 other states have now passed similar statutes. It is not yet possible to determine if this will help alleviate the problem.

An additional solution to the organ supply problem is the development of techniques for the simultaneous procurement of liver and pancreas grafts despite the common vascular supply. A key development in liver transplantation is the method of the ex vivo preservation of grafts using the University of Wisconsin solution. Many centers are reporting excellent graft function after periods of ischemia of as long as 24 hours compared with 8 hours previously. This solution has not only provided better graft function but also expanded the acceptable donor pool, allowed for further travel to donors, allowed a semi-elective approach to the recipient operation, and lowered costs.

Nowhere is the paucity of size-matched donor organs more devastating than in infants and children. This problem has been addressed recently by reducing the size of the graft with partial hepatectomy and implanting the remaining portion of the graft.

Liver transplantation has forced us to ask questions about our capacity to develop new and expensive therapeutic modalities as health care costs increase. The Oregon legislature took a provocative position in this allocation issue by discontinuing Medicaid payment for extrarenal transplantation, a decision they are reconsidering. These ethical issues are important and force society and physicians to scrutinize the cost-effectiveness of new therapies in promising areas of advancement. It is equally important to subject established medical practices to a similar scrutiny.

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Noninvasive Vascular Diagnosis

ADVANCES IN THE FIELD of noninvasive vascular diagnosis continue at a rate sufficiently rapid to render most summaries of new developments obsolete by the time of publication. A burgeoning technology, coupled with active research efforts in many centers, ensures that the explosive development characterizing this field will continue. The result of this activity is the current availability of a panoply of testing modalities that, taken together, provide a scientific foundation on which to base an objective diagnosis of the presence and